**Application of Advanced Technology in space Activities**

*263. DR. K. MALAISAMY: Will the PRIME MINISTER be pleased to state:

(a) where do we stand in the application of advanced technology in space activities in comparison with the developed/developing countries;

(b) whether our objective to use space technology as an instrument for socio-economic development of people has been achieved;

(c) whether the process of finding out the natural resources like water, forest, minerals, other potentialities of every State has been completed; and

(d) if so, how many States have used such information?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) to (d) A Statement is laid on the Table of the House.

***Statement***

(a) India ranks today as one amongst the top few countries in the world to have effectively utilised the advanced space technologies such as satellite remote sensing and communications in various social and developmental applications.

(b) Yes, Sir. The space technology applications have been integrated in areas of direct relevance to the socio-economic development of the people such as, natural resources, environment and disaster management. Using Satellite based telemedicine and tele-education, health care and educational programmes are taken to remote parts of the country.

(c) and (d) Many National and State level applications projects have been carried out using satellite remote sensing & Geographic Information System (GIS) in various States. Some of the major efforts carried out are towards identifying prospective zones of ground water occurrence; monitoring of the performance of the major irrigated command areas; reclamation of saline/alkaline affected soils and wasteland reclamation; biennial monitoring of forest cover, assessment of biodiversity; study of prospects for mineral bearing zones; mapping and dissemination of potential fishery zones; infrastructure development in rural and urban areas; coastal regulation zoning; environmental impact assessment etc.

Besides the above, satellite communication technology has been employed to provide 2-way speech circuits, television broadcasting including Direct to Home services, telemedicine and tele-education services to remote rural areas. Almost all the states in the country have made use of the space technology applications.

DR. K. MALAISAMY: Sir, I am very happy indeed to note that we are one among the notable nations in the world in the application of advanced technology in space. I am fairly and broadly satisfied with the reply given by the hon. Minister, except on certain specific areas.

My first supplementary is this. We are able to obtain information from these devices. I would like to know from the hon. Minister whether such information or the data given are illustrative or exhaustive and, whether they are intensive or only superficial. The final part of my supplementary is that there are umpteen no. of other devices to make survey and exploration. If so, how do they compare with our remote sensing and communication system?

SHRI PRITHVIRAJ CHAVAN: Sir, using Indian remote sensing satellite and the communication satellite technology, broadly, the entire country is surveyed on a particular scale. After that, detailed surveys are carried out, which are furhter proved by ground surveys. So, this is an ongoing process. In the space technology, particularly the remote-sensing technology, we are the one of the most advanced countries in the world. And, that technology is used in all societal developments and dimensions. The work is on-going. Detailed surveys are being done for various aspects in particular States. As I said, the entire country has already been mapped on a particular scale. The higher scale mapping is being done. But it is an integrated approach with communication capability and ground surveys and so on, an all-encompassing work to be done with various Government departments.

DR. K. MALAISAMY: Sir, in the answer it has been stated that the remote-sensing technology and communication technology are capable of detecting disaster management area also. If so, are they capable of detecting tsunami and other natural calamities in advance?

SHRI PRITHVIRAJ CHAVAN: Sir, for disaster management, the remote-sensing technology is used for identifying land-risk zones and for timely information about floods, etc. It is not possible to predict tsunami.

But the remote-sensing technology has been extensively used in post-tsunami restoration work.

SHRI DINESH TRIVEDI: Sir, I would like to take this opportunity to congratulate our scientists for giving us such advanced technologies—whether it is in the field of nuclear science or the space. There are two aspects of it—one, the peaceful use that we are doing; second, is concerned with security. And, I have just two points. One, with the help of the recent 'Google Earth' that has been developed, if you have internet, you can see, from any part of the world, the lawns of the Prime Minister's house, or, my house, or, for that matter anybody's house. It is a security concern. So, the question is, are you banning some such installations where 'Google Earth' will not be able to show the picture. Second one concerns with the recent developments of space weapons. What is India's stand on the development of space weapons, which the countries, like, America and China are carrying on? What is our stand on space weapons?

SHRI PRITHVIRAJ CHAVAN: Sir, the hon. Member has put two different questions. One is about the website 'Google Earth'. He is very right that with a click of a button, you can get very high-resolution imageries of all the areas. Now, so far as the point whether certain areas can be masked off, which can be produced at low resolution, does not arise out of this notice. But work is going on. The Ministry of Science & Technology and the Ministry of Defence are in touch with the appropriate concerned agency. As regards second part of the question, it does not arise out of it. It is about the remote-sensing capabilities, not about space weapons. He can give a separate notice for it to the appropriate Ministry.

SHRI DINESH TRIVEDI: Sir, would the hon. Minister come back to me after going through that, if you permit him? Do you permit him to answer this question later on?

SHRI PRITHVIRAJ CHAVAN: Sir, I think, it is more concerned with the Ministry of Defence.

SHRIMATI S.G. INDIRA: Sir, It has been reported that India's first mission to the Moon, that is, Chandrayan-I is progressing, as planned, towards its launch in 2007-08. It has also been reported that the ISRO has selected instruments from the US and Europe to carry in Chandrayan-I for conducting experiments for the advancement of scientific knowledge about Moon. So, I would like to ask the hon. Minister what would be the advantage for carrying oversees equipments in Chandrayan-I, and what are the conditions agreed for between those countries?

SHRI PRITHVIRAJ CHAVAN: Mr. Chairman, Sir, although this question does not arise out of the main question, but I will, definitely, compliment the hon. Member; she is absolutely right. The Chandrayan-I mission is on schedule. It will fly in an unmanned moon orbital mission in 2007-08. It is part of an international scientific collaboration. Our experiments are carried by international agencies. Similarly, we are offering our satellite launch facilities for carrying out experiments from Europe and the United States. We will be carrying out about six experiments; four from Europe and two from the United States, in addition to our main payloads. It will be the only moon mission in the next 2-3 years which will enhance our knowledge about moon. It will also validate many of the deep space network technologies about deep space communications, and many other technologies, which will enhance our space capabilities for future programmes.

SHRIMATI N.P. DURGA: Sir, India has signed MoUs with 25 countries, that is, with space agencies to exchange various applications of modern technology in the field of space. India has also set up a U.N. sponsored Centre for Space Science and Technology Education in the Asia Pacific region. So, my simple question to the hon. Minister is: What are the advanced technologies that India got from the above countries and agencies in the last five years which were useful for the socio-economic development of our country?

SHRI PRITHVIRAJ CHAVAN: Mr. Chairman, Sir, we have signed various technology cooperation MoUs with many countries. India is one of the developed countries in the field of space, and, we are in a position to give technologies to many countries. As a matter of fact, the Asia Pacific Space Science and Technology Training Centre is in Dehradun where we train people from many of the developing countries in space technology, remote sensing, and communication science; and this is part of the on going international collaboration.

DR. K. KASTURIRANGAN: Sir, in the context of the competing systems which could also provide services similar to the space, there have been studies in the recent past on the cost benefit analysis of the space programmes. This has very clearly brought out the importance of space approach for several applications to meet the end goals. Through you, Sir, may I request the hon. Minister to illuminate us as to what steps the Government has taken to bring awareness about the results of these studies in the public domain.

SHRI PRITHVIRAJ CHAVAN: Sir, the hon. Member is an expert in space technology, and, I think, his contribution to the space technology is undoubtedly very great. He is absolutely right, Sir. We are working in so many different areas as to give the benefits of space technology to society and for the socio-economic development of the country. It comes out of the remote sensing of the land mass, and communication satellites, particularly, for tele education with the EDUSAT, and also with the tele medicine project which is going on. We are reaching the remotest hospitals with the specialised institutions in the world. The remote sensing, where we are tapping the data is used almost in every Department of the Government of India. It is utilising the cartographic data and the remote sensing data that we are giving. We are now setting up a number of village resource centres. An outstanding work has been done by the Dr. Swaminathan Foundation. These village resource centres will be spread all over the country. We have a plan to set up a hundred in the initial stage, and we want to take it up further. These village resource centres will link the users, through the space technology, to the data that is available with the Government agencies. This is a very ambitious programme that we want to take up in the days to come.

**Outsourcing services in the process of issue of visas**

*264. DR. ALLADI P. RAJKUMAR: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that some of the services in the process of issue of visas in some countries have been outsourced in view of huge demand;

(b) if so, the countries and the type of service outsourced for the purpose;

(c) the other countries where a similar action is proposed to be taken;

(d) whether enough security considerations were taken into account before allowing outsourcing; and

(e) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SHRI E. AHAMMED): (a) to (e) A Statement is placed on the Table of the House.